

In the Claims:

Please cancel claim 17 without prejudice. Please amend claims 1-3, 6-8, 15-16, and 18-19 as shown below.

1. (Currently amended) An isolated protein having phytase activity comprising an ~~amino acid sequence of SEQ ID NO:2 at its N terminus wherein said protein having~~ the following characteristics

- (a) ~~Molecular weight : about 47 kDa on SDS-PAGE,~~
- (b) ~~Optimal pH : pH 3.5-pH 4.5,~~
- (c) ~~Optimal temperature : 45°C-55°C,~~
- (d) ~~Substrate specificity: phytate, p-nitrophenyl phosphate, tetrasodium pyrophosphate, ATP or ADP,~~
- (e) ~~Michaelis constant of 0.3-0.5 mM utilizing phytate as a substrate,~~
- (f) ~~High resistance to protease such as pepsin, trypsin, papain, elastase or pancreatin pancreatin,~~
- (g) ~~Specific activity to phytate : at least 1,500 units/mg amino acid residues 23-433 of SEQ ID NO: 7.~~

2. (Currently amended) The protein as set forth in claim 1, wherein the protein ~~comprises an amino acid sequence represented by amino acid residues 23-433 of SEQ ID NO:7 or amino acid sequence having over 70% sequence homology with the same~~ has the following characteristics:

- (a) molecular weight: about 47 kDa on SDS-PAGE,
- (b) optimal pH: pH 3.5-pH 4.5,
- (c) Optimal temperature: 45°C-55°C,

(d) substrate specificity: phytate, p-nitrophenyl phosphate, tetrasodium pyrophosphate, ATP or ADP,

(e) michaelis constant of 0.3-0.5 mM utilizing phytate as a substrate,

(f) high resistance to protease such as pepsin, trypsin, papain, elastase or pancreatin, and

(g) specific activity to phytate: at least 1,500 units/mg.

3. (Currently amended) The protein as set forth in claim 1, wherein the protein comprises ~~an amino acid a polypeptide sequence represented by of SEQ ID NO:7 or an amino acid sequence having over 70% sequence homology with the same.~~

4. (Canceled)

5. (Previously presented) The protein as set forth in claim 1, wherein the specific activity of the protein to phytate is at least 3,000 units/mg

6. (Currently amended) A An isolated gene coding encoding the protein of claim 1.

7. (Currently amended) The gene as set forth in claim 6, wherein the gene has a ~~base~~ polynucleotide sequence represented by of SEQ ID NO:6 or a base sequence having over 70% sequence homology with the same.

8. (Currently amended) A An isolated microorganism belonging to *Citrobacter* species producing the protein of claim 1.

9. (Previously presented) A feed additive containing the protein of claim 1 as an effective ingredient.

10. (Original) The microorganism as set forth in claim 8, wherein *Citrobacter* species is *Citrobacter braakii*.

11. (Original) The microorganism as set forth in claim 10, wherein *Citrobacter braakii* is *Citrobacter braakii* YH-15 strain (Accession No: KCCM 10427).

12. (Previously presented) A feed additive containing the microorganism of claim 8 as an effective ingredient.

13. (Previously presented) The protein as set forth in claim 2, wherein the specific activity of the protein to phytate is at least 3,000 units/mg

14. (Previously presented) The protein as set forth in claim 3, wherein the specific activity of the protein to phytate is at least 3,000 units/mg

15. (Currently amended) ~~A~~ An isolated gene coding the protein of claim 2.

16. (Currently amended) ~~A~~ An isolated gene coding the protein of claim 3.

17. (Canceled)

18. (New) A An isolated microorganism belonging to *Citrobacter* species producing the protein of claim 2.

19. (New) A An isolated microorganism belonging to *Citrobacter* species producing the protein of claim 3.

20. (Previously presented) A feed additive containing the protein of claim 2 as an effective ingredient.